APR 25 1921

GENERAL LIBRARY
APR 25 1921
UNIV. OF MICH.

SCHOOL AND SOCIETY

EDITED BY J. McKEEN CATTELL

General Library 1921
University of Mich
Ann Arbor Michigan

Volume XIII SATURDAY, APRIL 23, 1921 Number 330

CONTENTS

Intelligence Tests in Colleges and Universities: L. M. TERMAN 481

The Improvement of College Teaching: W. W. CHARTERS.. 494

Educational Events:
Medical Education in China; The Affairs of the New York City Board of Education; The Building Program of Columbia University; The Stanford School of Education 497

Educational Notes and News 500

Special Correspondence:
Foreign Educational Notes: ALLEN W. PORTERFIELD.
House Cleaning in the St. Louis Schools 503

Discussion and Correspondence:
The Price of a One-language Policy: IRENE NYE 507

Quotations:
University Leadership 508

Educational Research and Statistics:
The Monroe Silent Reading Test: PAUL V. WEST 510

$5.00 A YEAR PUBLISHED WEEKLY 15 CENTS A COPY

THE SCIENCE PRESS

LANCASTER, PA. GARRISON, N. Y.

Entered as second-class matter January 2, 1915, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879

The American Public School

By ROSS L. FINNEY

Mr. Finney's book is a distinct departure from the usual text in the history of education. In this book attention is confined to the American Public School system. It is a discussion of contemporaneous educational history from the genetic standpoint. History of education in Europe is touched upon only as it affects the American School.

Stress is placed on the educational history of the last thirty years. The author has succeeded in making it an interpretative presentation of American educational history.

Silent Reading

By DR. JOHN ANTHONY O'BRIEN

Dr. O'Brien presents in this book a brief resume of investigations into the subject of silent reading, and calls attention to the fact that up to the present time there has been no systematic attempts to utilize the findings of experimental investigations for the formulation of methods of training in affective rapid silent reading. The author accepts that undertaking as the problem of his book and proceeds in a most practical way to adopt the findings of the psychological laboratory and of experimental investigations to the development of practical methods of classroom procedure.

THE MACMILLAN COMPANY

New York Chicago Boston
Atlanta Dallas San Francisco

SCHOOL AND SOCIETY

Volume XIII SATURDAY, APRIL 23, 1921 Number 330

INTELLIGENCE TESTS IN COLLEGES AND UNIVERSITIES[1]

THE university professor's experience renders him peculiarly receptive to the present-day view of psychologists that among so-called normal human beings there exists rather large differences in native intellectual ability. Intelligence tests show that his belief is justified, notwithstanding the fact that the range of intellectual differences found in a university classroom is always demonstrably much less than that in the general population. In fact, the former range is to the latter approximately as 1 to 2. The general population covers the wide range from genius to vegetative idiocy, university students only that from genius to a point not considerably below the intelligence of the average individual of the northern, central, or western European races.

Although the fact is often strangely overlooked, it ought to go without saying that the value of the university's product is determined as much by the original quality of the raw material with which it works as it is by salary budget, instructional methods or curriculum. It is not denied that the relatively dull student may and perhaps usually does obtain some benefits from a college education. But a university may "educate" any number of such students without making any appreciable contribution to the advancement of science, art, or civilization generally. If the 1,000 best endowed students in Stanford University were replaced by an equal number at the lower end of the university intelligence distribution, and if that situation were made permanent, no amount of endowment or internal improvement could maintain our present rank in relation to other institutions of higher learning and professional training. On the other hand, if our 1,000 dullest students were replaced by an equal number all of whom belonged above the lower limit of the top five per cent. of our present student body, and if that situation could be made permanent, Stanford might hope to become one of the world's greatest universities within a few score of years. Perhaps the same end could be accomplished if Stanford could attract and keep the ablest 3 per cent. of the 35,000 or so college students west of the Rocky Mountains. To secure a student personnel that highly selected may not be possible for any university, but Stanford, because of her independent resources, is in a better position to approximate that goal than any other university in the West.

Special effort in this direction will be needed to overcome the effects of our comparative isolation. Distances in the West are vast and the population is sparse. On the entire western slope there are hardly more people than are to be found in the city of New York. It is hard for even very able professors to attract the select kind of students they want from the East or the Middle West. In the past Stanford has lost able professors because of the lack of advanced students in sufficient numbers, and anything we can do to increase the proportion of students competent to do

[1] Address before the Stanford University Forum, February 21, 1921.

advanced work will make it easier to attract and keep professors of first rank.

That institutions of college or university grade do differ markedly with respect to the average quality of students attracted is indicated by several lines of evidence. Kunkel,[2] for example, finds that three times as many graduates of Amherst, 1850–1890, got into "Who's Who" as was the case for Colgate, although the two institutions have approximately the same endowment and are of nearly the same age. The number for Williams was four times as great as for Amherst and twelve times as great as for Colgate. His figures for 25 colleges are as follows:

TABLE I

Showing Per Cent. of Alumni in "Who's Who"

Institution	Per Cent. of Alumni (1850–1890) in "Who's Who"
Williams	23.4
Wesleyan	6.4
Trinity	6.2
Amherst	5.8
Rutgers	5.6
Hamilton	4.8
Haverford	4.6
Dartmouth	4.1
Franklin & Marshall	3.8
Bowdoin	3.3
Lafayette	3.4
Ohio Wesleyan	3.2
University of Pennsylvania	3.2
Beloit	3.0
Middlebury	2.9
Union	2.6
Wabash	2.5
Depauw	2.3
Hobart	2.3
Washington & Jefferson	2.2
Colgate	1.9
Knox	1.7
Allegheny	1.6
Oberlin	1.5
Tufts	0.7

[2] B. W. Kunkel, "The Distinction of College Graduates," SCHOOL AND SOCIETY, August 28, 1915, Vol. 2, pp. 316–324.

According to the figures which have been furnished me by our alumni secretary, the proportion of Stanford graduates from 1895 to 1906 who are in the 1920–21 "Who's Who" is 3.2 per cent., which is only about the median for the above group.

Army mental tests given in a large number of institutions have also brought out striking differences in the average intelligence of student bodies. The data in Table II. are typical.

TABLE II

Median Alpha Scores in Different Institutions

Institution	No. Cases	All Classes	1st yr.	2d yr.	3d yr.	4th yr.
Yale	372	.....	160	...	...	...
Oberlin	330	.....	149	...	...	...
U. of Ill.	3,500	.....	143	145	145	153
Brown	210	142	...	...	...	...
Notre Dame	321	137	...	...	...	...
Ohio State	5,950	136	130	137	140	144
U. of Minn.	534	.....	129	...	...	...
Purdue	1,159	128	...	...	...	...
U. of Idaho	277	125	...	...	...	...
U. of Fla.	215	120	...	...	...	...
Lincoln Memorial	171	86	...	...	...	...

Another line of evidence, though one which is more ambiguous, is the proportion of graduates who later acquire a Ph.D degree. Walcott[3] has collected such figures for 16 institutions of collegiate grade, all but three of which are private institutions comparable to Stanford. Of 29,021 graduating with the A.B. degree from these institutions, 1,315 later took the Ph.D. degree, or 4.5 per cent. The corresponding per cent. for Stanford for those taking the A.B. degree between 1896 and 1912 was 3.6, or only four fifths as large a proportion as the average for the other 16 institutions.

For any university whose attendance must be artificially restricted the selection

[3] Gregory D. Walcott, "A Statistical Study of Doctor of Philosophy Men," II., SCHOOL AND SOCIETY, January 16, 1915, Vol. 1, pp. 102–108.

of the ablest candidates obviously becomes one of its most important problems, indeed comparable in importance with the selection of a faculty. However, it is easier to agree on the end than on the means for its accomplishment. I have been asked to discuss intelligence tests as an aid in this direction. In doing so I should not want to be understood as believing that existing psychological methods, or any likely to be devised will give an infallible measure of an individual's all-round desirability as a university student. It is recognized that this is determined to a considerable extent by strictly non-intellectual factors, such as energy, industry and moral character. For these traits no successful measuring rods have yet been prepared.

It should also be emphasized that our discussion does not need to assume that intelligence itself can be accurately measured, still less that the psychology of intelligence is thoroughly understood. For our present purposes we might very well eliminate the terms "intelligence" and "intelligence tests" altogether, as carrying implications which are likely to confuse the issue. However, to avoid circumlocution and unnecessary word coinage I shall keep both terms. Those who prefer to do so may think of intelligence tests simply as a more or less imperfect method of arriving at a prediction of an individual's probable success in certain kinds of intellectual work. The value of the prediction may be judged wholly in terms of correlation coefficients or other quantitative, objective evidence. Personal opinion may be left out of the question altogether.

Time is not available for a discussion of the theoretical aspects of intelligence testing or even for an exposition of the current methods used in devising tests, in trying them out against various criteria, or in timing, scoring, weighting, and combining them into test batteries. It is important to note, however, that the deductive and *a priori* methods of a decade ago are being rapidly superseded by methods which are empirical, inductive and quantitative. Drag-net tests are devised for the extensive sampling of mental processes. The samplings are then subjected to minute analysis in the light of comparative standards. This is the method used whether the test is designed to measure intelligence or some other mental trait. For example, in working over the results of the so-called "synonym-antonym" intelligence test I have found that the ability to identify two words as synonyms is an appreciably better measure of the kind of intelligence required to do school work than is the ability to identify two words as opposites. No one could have definitely foretold that such would be the case. Any number of illustrations could be given of the impossibility of judging by other than inductive methods the merits or faults of a mental test. It must be judged by the way it acts, not by the way it looks from the point of view of *a priori* opinion or speculative bias.

The following graphs and tables have been prepared to show the value and limitations of available intelligence tests in the prediction of various kinds of success. (Omitted here. The graphs were based upon army mental test data and on the results of Binet and group tests with school children. The school data showed that for grammar-school and high-school pupils the scores of certain intelligence tests give a correlation of .75 to .80 with the best available composite criteria of educability. One typical correlation array is reproduced here, that showing relation between composite criterion and test scores

earned in the Terman Group Test by 218 pupils enrolled in grades 7 to 10.)

TABLE III

The Terman Group Test as a measure of the Educability of 218 Pupils in Grades 7 to 10.
($r = .773$)

Intervals of Terman Group Test Scores	Intervals of Criterion Scores in School Success											
	1	2	3	4	5	6	7	8	9	10	11	12
16												1
15											2	1
14							1		3	6	3	2
13						2	1	1	3	2		
12				1		2		3	3	2	1	1
11					1	3	6	3	5	2	1	
10				1	1	2	7	4	1			
9			4		2	4	10	3	4			
8			3	3	9	6	6	5	2	1		
7	1	1	3	2	6	3	1	3	1			
6	1	3	3	2	6	3		2				
5	2	3	1	6	3	1	1					
4	2	3	4	2		2						
3	1	1	1		1							
2		1										
1	1											

Turning to the results of similar tests in colleges and universities it is not surprising to find that the correlations between intelligence scores and student success are as a rule considerably lower than those found in the grammar and high schools. There are at least three reasons why this should be so. In the first place, due to selection, the range of ability in college is less than in the lower schools. As everyone understands who has done statistical work with mental tests, this greater homogeneity of the group automatically lowers the correlation coefficient. In the second place, non-intellectual traits probably influence scholastic success in college considerably more than in the lower schools. The university teacher must compete with an entire galaxy of distracting influences, including economic handicaps, budding social instincts, freedom without self-restraint, love affairs, athletics, and other college activities without number. In the third place, the class marks by which scholastic success is judged are less reliable in colleges than in the grammar or high school. Due to these factors, and perhaps also to others, the correlations of test score with scholastic success in college rarely go above .6 and often drop to .4 or lower, according to the kind of test used, the reliability of teachers' marks, and the homogeneity of the group tested. The following charts show typical results. (Not reproduced here. The charts exhibited showed correlation arrays for university scholarship index and test scores in the Alpha, Stanford-Binet, Thurstone, and Terman Group tests.)

All the available correlation coefficients have been brought together in Table IV., to show the results of recent experiments with intelligence tests in colleges and universities. The table includes several correlation coefficients reported to me in personal correspondence with psychologists in 25 leading institutions as well as all the coefficients I have been able to find in published reports.

In the case of the Stanford correlation of .46 between average marks for 1 to 3 quarters and Stanford-Binet score (Table IV.), the score used was I.Q. earned in a Binet test given four years previously when the students in question were enrolled in the first-year high school. That the correlation of this test was .46 with university marks earned four years later is very significant.

TABLE IV

Individual Correlations Reported for Intelligence Tests in Colleges and Universities

Institution	Test Used	No. Cases	Nature of Comparison	r Value
University of Minnesota	Special set	50	Marks, 1st yr. medical school	.60
Brown	Special set	?	Marks, 1st yr. college	.60
University of Iowa	Special set	21	Estimates of two instsuctors	.70
University of Chicago	Kitson set	40	Marks, 1st yr. college	.44
" " "	Kitson set	Same group	Dean's estimates	.57
Carnegie Tech	Special set	114	Pooled estimates of instructors	.60
Sweet Briar	Special set	68	Composite estimates of other students	.63 to .73
" "	Special set	Same group	Composite estimates of teachers	.83 to .84
Yale	Special set	85	Average marks	.42
Brown	Thorndike	?	Average marks	.53
University of Chicago	Thorndike	?	Average marks	.41
Columbia	Thorndike	?	Marks, 1st yr. college	.60
Stanford	Terman Group	63	Marks, 1st quarter	.54
"	Terman Group	59	Average marks, 2 to 4 yrs.	.42
"	Stanford-Binet	42	Average marks, 2 to 4 yrs.	.42
"	Stanford-Binet	91	Average marks, 1 to 3 quarters	.46
University of Wyoming	Stanford-Binet	64	Marks in psychology	.53
Randolf-Macon	Stanford-Binet	48	Average marks	.44
"	Stanford-Binet	Same group	Estimates of 6 instructors	.47
University of Minnesota	Alpha	?	Marks, 1st yr. college	.50
Brown	Alpha	?	Marks, 1st yr. college	.46
Yale	Alpha	373	Marks, 1st yr. college	.38
University of Arkansas	Alpha	315	Marks in various departments	.42 to .65
Southern Methodist	Alpha	321	Marks, preceding term	.52
Stanford	Alpha	94	Average of 9 history examinations	.32
"	Alpha	Same group	Markf, 1 to 3 yrs.	.43
"	Alpha	313	Marks, 1 to 4 yrs.	.31
Pa, State	Alpha	320	Marks, 1st semester	.41
University of Oregon	Alpha	71	Average marks	.49
University of Illinois	Alpha	198	Marks, 2d semester	.37
Hamlin	Alpha	145	Average marks	.47
Evanston	Thurstone	650	Marks, 1st semester	.29
Vassar	Thurstone	278	Marks, 1st year college	.33

The Stanford correlation of .54 between the Terman Test and average university marks was exactly the same as the correlation for a miscellaneous Stanford group between average high-school mark and both Form A and Form B of the Terman Group Test were given, but with reduced time. Both forms were given in a single sitting of fifty-five minutes.

TABLE V

Summary of Correlations Reported for Intelligence Tests in Colleges and Universities

Test Used	Average r with Marks	Average r with Estimates	Total Range of r Values
Special sets	.52 (4 groups)	.67 (5 groups)	.42 to .83
Thorndike	.51 (3 groups)	.....	.41 to .60
Terman Group	.48 (2 groups)	.....	.42 to .54
Stanford-Binet	.46 (4 groups)	.47 (1 group)	.42 to .53
Alpha	.42 (12 groups)	.....	.31 to .50
Thurstone	.31 (2 groups)	.....	.29 to .33

Low as the above correlations may appear to be, they nevertheless make possible such statements as the following:

Stanford, 313 cases, S. A. T. C. group: r = .31. Of highest 25 in marks, only 2 got below the median test score for the group. Of highest 52 in marks, only 10 got below median test score. Of 11 who fell below score 110, only 1 got above average mark. Of 38 who fell below score 123, only 7 got above average mark.

Stanford, 59 cases, Philosophy Class; r = .42. Of 21 lowest in scholarship, only 4 were above the median score for the

group. Of 21 highest in scholarship, only 4 were below median score.

Stanford, 94 cases, History Class; r = .43. Of the lowest 16 in marks, not one was up to median in the test. Of highest 24 in test, only 4 were below the median in marks.

Stanford, 63 cases, Physics Class; r = .54. Of the highest 18 in the test, only 3 were below average in marks. Of the lowest 16 in the test, only 2 were above average in marks. Of the highest 19 in marks, only 1 was below average in the test. Of the lowest 17 in marks, only 4 were above average in the test.

Columbia, Dr. Mann's Engineering tests, 34 cases. Of 7 highest in the test, 5 had received honors in the three years. Of 7 lowest in the test, 4 failed in more than half their studies and dropped out. Of 7 highest in the test, all made more than 125 credits in three years. For the middle 7, average number of credits earned in three years was 92. For the 2 remaining in school, of lowest 7, average credits earned in three years was 54.

Brown, Special test; r = .60. Of 34 rated as "very good" in work, only 1 was below average in test.

Yale, Alpha; r = .38. Of 9 "first honor" men, none fell below 141.

Most of the tests on which the above correlations are based were not originally intended for college students. The Thorndike test, which is an extension and modification of the army test, is doubtless the best test for first-year college students. While it perhaps gives only slightly better correlations than several special sets which have been devised, it has the great advantage of being practically coach proof and of having an exceptionally high reliability coefficient (estimated by Thorndike as .995 for unselected 18-year-olds, and as .97 for the restricted range of college students). The different forms are guaranteed to be within 3 per cent. of equal difficulty. The practise gain from taking the test once is exceedingly small. The procedure is very simple and the scoring is so nearly objective that the correlation between two practised scorers is about .98. It correlates with university marks from .50 to .65. Anything above .50 is an improvement on any standard system of admitting students. For unselected 18-year-olds its correlations with scholarship would probably be .75.

However, the significance of a given correlation coefficient is a relative matter. Compared with other available means of predicting the success of college students the intelligence test makes a favorable showing. Ratings by two teachers of students they have known for years usually fail to correlate more than .5 or .6. Independent ratings by two high-school instructors of fifty English compositions is not likely to be over .2. For a given group of students the average of class marks received in four years of high-school work ordinarily correlates only about .6 with average mark in the first year of college. The correlation of high-school marks with average mark for the sophomore, junior, and senior years, of course, becomes progressively lower. In general, the results show that the marks for four years of high-school work have no more predictive value than one of the standard intelligence tests. Thurstone, for example, found that a special test which he devised gave a better prediction of second semester marks than did the marks earned during the first semester, and Haggerty found a higher correlation between intelligence test scores and first year marks in the medical school than between the latter and average of all the marks earned in the preceding three years

of college work. Table VI. gives typical correlations of the predictive value of school marks.

TABLE VI

Predictive Value of Class Marks

Institution	Comparison Made	r Value
University of Iowa	4 years high school *vs.* 4 years college	.53
Columbia	4 years high school *vs.* first year college	.63
University of Arkansas	4 years high school *vs.* 4 years college	.54
Stanford	4 years high school *vs.* 2–4 years college	.54
Texas	4 years high school *vs.* first year college	.69
Same group	4 years high school *vs.* second year college	.74
Same group	4 years high school *vs.* third year college	.65
Same group	4 years high school *vs.* fourth year college	.38
University of Minnesota	2–3 years college *vs.* first year medical school	.49
Same group	intelligence test *vs.* first year medical school	.60
Harvard	4 years high school *vs.* first year college	.69
Same group	4 years high school *vs.* second year college	.58
Harvard	college entrance examination *vs.* first year college	.47
Same group	college entrance examination *vs.* second year college	.41
Columbia	college entrance examination *vs.* first year college	.62
Same group	college entrance examination *vs.* second year college	.50
Same group	college entrance examination *vs.* third year college	.47
Same group	college entrance examination *vs.* fourth year college	.25

The value of the intelligence test lies chiefly in the fact that it furnishes data not duplicated by any of the other criteria. It gives a new line on the student. More than other kinds of information, it tells us what grade of work we have a *right to expect*. It gives a favorable starting point for investigating the causes of failures. It enables us to discriminate between the intelligent student whose failure is avoidable and the student whose inferior native ability renders him comparatively non-educable. The latter can be gotten rid of and the former could probably, in some cases, be reformed by bringing proper pressure to bear.

Our Scholarship Committee deals with some six hundred cases of probation, failure, or disqualification yearly. Many additional cases are considered but not acted upon. As a member of this committee I feel that in many cases we are acting in the dark. I have no doubt that we often exercise leniency toward students who are intellectually hopeless and as often deny it where it is deserved. We are almost invariably at a loss to know what action to take in regard to students who have been disqualified and wish to return to the university after they have been out the allotted year. A number of universities which do not give mental tests to all their students do test all who are placed on probation.

The financial aspects of this problem deserve consideration. During the academic year 1919–1920, according to the registrar's records, 165 students were disqualified (dropped) for poor scholarship. These had spent a total of 210 student years in the university. As the annual cost of tuition per capita was $620 only $120 of which was met by tuition fees, the net loss was at the rate of $500 a year for each student, or a total of $105,000. The women, who are more highly selected, account for only $3,166 of this loss, which is only about one tenth of their proportionate share. Feminine industry may of

course help to account for the rather astonishing sex difference in scholarship record. Besides the 165 who were disqualified, 204 were given "failure" and 261 others were placed on probation.[4] "Failure" at Stanford, ranks in seriousness between probation and disqualification. If a student fails twice he is automatically disqualified. The large majority of students both of the failed and probational group are of doubtful desirability, to put it mildly, yet these two groups together were carried during the year 1919–1920 at a cost of $232,500 (465 at $500 each). Add this to the net loss on disqualified students ($105,000) and we have a grand total of $337,500. This is 20⅔ per cent. of the $1,632,995 total expenditures during the year for (1) instruction and research ($817,133), (2) independent departments and divisions ($650,665) and (3) operation and maintainance of the educational plant ($165,197). The bill for students disqualified during the year was 6.43 per cent. of the total expenditures, and 12.85 per cent. of the expenditure for instruction and research. Surely it is time to investigate ways and means of reducing this enormous questionable expenditure.

It may be argued, of course, that the effort and money expended on this class of students does not represent a pure waste of funds, since doubtless many of them derive some benefit from their sojourn here. From another point of view, however, the money is worse than wasted. Students of this type lower the standards of accomplishment, set an unwholesome example to others, waste valuable time of professors and clog the machinery generally. If it were feasible to give a Thorndike intelligence examination at entrance, a good part of this loss could be prevented, and the cost of blanks, record forms, and clerical help would not exceed $1,000 a year.

One might suppose that the high standards of California high schools, coupled with the fact that we require at least twelve of the fifteen units of high-school work to be of "recommended" grade (approximately grade "B" quality), would afford reasonably adequate protection against outright stupidity. Such is far from being the case. The test I have given to several groups of our students indicate that not far from ten per cent. are intellectually incapable of graduating from any first class college or university. The case of "X" is an illustration, though possibly a rather extreme one.

"X" entered Stanford in 1917 with credentials showing graduation from a small but accredited California high school. He presented 15 units of work, all of which were of "recommended" grade. The only suspicious circumstance was that he had spent five years in high school and was almost 20 years old. He registered in mechanical engineering (woodwork), psychology (mental hygiene), and drawing (still life, perspective). Three weeks later the instructor in drawing asked me to give the boy a mental examination, because of suspected mental deficiency. A Stanford-Binet test gave a mental age of 12½ years! There was one failure each in the tests for nine, ten and twelve years, three failures in year fourteen, and no successes beyond. He had no idea of the meaning of the words "civil," "bewail," "priceless," "disproportionate," "tolerate," "depredation," "brunette," "flaunt," "crunch,"

[4] The above groups are mutually exclusive, each student being listed but once according to the most serious action taken against him. If a student was first probationed and later disqualified, he is listed only as disqualified, etc.

"shrewd," "repose," "conscientious," or many others hardly more difficult. Some of the results of this test were so incredible that in the next few weeks I devoted about twenty hours to a further study of the case, applying a large assortment of standardized educational and mental tests. In a half dozen intelligence tests his mental age scores all ranged from 12 to 13½ years. In the educational tests his scores ranged from median for grade 5 (arithmetical reasoning) to median for grade 9 (spelling). Average achievement in the subject-matter tests was not far from grade 7. It is not surprising that "X" failed in all his work and was dismissed. His mid-term examination in psychology had included such questions as "Distinguish between (*a*) philosophy and psychology, (*b*) sensation and perception, (*c*) mind and soul"!

"X" had good clothes, fair manners, and a high-powered automobile. He was therefore promptly initiated into one of the Greek letter fraternities! When he was leaving the university, after failing, he came to my office to bid me goodbye and told me he was glad it was all over. He said he had continued in high school under protest and had not wanted to go to college; that he had done his best and failed; that he never could learn out of books, but knew he could go back home and sell groceries and hardware in his father's general store.

For various reasons it may not be feasible to make the passing of an intelligence test a prerequisite to matriculation at Stanford. The difficulties in its practical administration would perhaps be too great. It would be awkward, for example, to call several hundred women to Stanford to take the examination when, because of our 500 rule, only a few score could be admitted. The plan of holding such examinations in many places throughout the country at stated intervals would hardly be more practicable. For the present it would perhaps be wiser merely to require students to take the test at the time of matriculation, and to record the results on their registration cards for such reference and use as occasion might give rise to. If this were done the records would soon be regarded as indispensable.

It might also be desirable to allow the exceptionally able candidate who is short in some of the usual academic entrance requirements to enter the university by the test route. Columbia permits this. Properly safeguarded, the plan involves no risk whatever of lowering academic standards. Instead, it puts the emphasis on ability, where it belongs. The candidate who can earn an exceptionally high test score in spite of inadequate training is the best possible bet as regards university promise. Besides, as Thorndike has pointed out, this plan would advertise the fact that the university is willing to concede to intellect; the best would be attracted and the weakest discouraged from entering.

Certain Federal Board men have recently been admitted to Stanford with sub-standard credentials, some of these on the strength of a high score in an intelligence test.

J. P. M. left school at end of the fifth elementary grade. Alpha score, 157, which is equal to that of the average Yale freshman. His record thus far is as follows:

	Units	Grade
Transportation	5	B
English composition	1	C
Citizenship	4	B +
Spanish	5	B +
Elementary economics	5	B
English, extemporaneous speaking.	2½	C +
U. S. history	5	B —
English, public speaking	2½	B

E. H. A. Two years of high-school work. Alpha score 170. Grades: 3 units elementary accounting, A; 5 units elementary Spanish, B —; 5 units European history, B —.

F. E. O. Four years of high school. Alpha score, 108; a score that usually spells failure at Stanford. Grades: applied mechanics, 5 units, D; elementary design, 3 units, +; pyro metallurgy, 3 units, D; heat engines, withdrawn. As might have been predicted from the Alpha score, this student has made a poor record, notwithstanding his more extensive preparatory training. Except in certain courses, it appears that scholastic success probably depends more upon native ability than upon the extent and kind of previous training.

As a member of a university committee which has the task of awarding undergraduate scholarships, I feel in almost every case that comes up the need of more objective data than are available regarding the candidate's ability. Such mistakes are inevitable under the present system. One can never know by what hook or crook a weak student may have been able to secure high enough marks to place him in the list of eligibles. Nor is there at present any sure means of identifying the exceptionally able student whose marks have suffered because of some kind of handicap.

An important function of the university is to locate students of exceptional intellectual superiority who may be encouraged to enter the field of research or university teaching. At present we have no information about the average quality of these recruits. No one knows whether the average is rising or falling. Some seem to fear that the worst is happening. It is reasonable to believe that a continual search for talent, coupled with vocational counsel and a little material encouragement in the way of assistantships or fellowships, would finally bring results. At any rate the National Research Council has decided to see what can be done. Plans are now under way for a nation-wide survey of universities for the discovery of intellectually gifted senior students. Formal action has been taken looking toward this end, and it is probable that both intelligence tests and professor's pooled estimates will be utilized.

Another interesting use of intelligence tests is in the comparison of student groups, as fraternity versus non-fraternity men, men versus women, majors in various departments, etc. Such a comparison is perhaps more enlightening than the usual comparisons based on class marks. Table VII., for example, indicates that in a given college certain departments may attract considerably abler students than certain other departments.

TABLE VII

Median Alpha Scores by University Departments

Ohio State, 5,950 Students

Liberal Arts	147
Medicine	142
Law	142
Engineering	141
Agriculture	133
Pharmacy	125
Dental College	115
Veterinary College	112
Special students	127
Graduate students	157
Entire university	136

Univ of Illinois, 3,500 Students

Law	163
Liberal Arts	147
Commerce	140
Engineering	140
Agriculture	139
Music	121

Table VIII., showing the average intelligence required to secure an A mark in

various subjects at Miami University, illustrates another interesting line of investigation.

TABLE VIII

Average Alpha Scores Required to Get A in Various Subjects (Miami University)

Subject	Median Alpha Score of Those Given A	No. of Cases
Philosophy	162	31
Physics	162	34
Mathematics	157	79
Economics	157	71
Psychology	156	14
Sociology	156	29
Chemistry	155	60
Greek	155	45
Latin	151	35
English	151	212
Spanish	150	51
French	149	121
History	145	69
Public speaking	144	40
Zoology	142	30
Botany	140	20
Geography	137	21
Drawing	132	24
Music	132	23
Home economics	126	10

Another use to which the tests are being put in several universities is in the sectioning of large classes into groups of more homogeneous ability. Of course it is not proposed that test scores should be made the sole basis for such grouping.

At George Peabody the tests are regularly referred to in granting permission to carry extra hours, students with Alpha score below 155 being refused this privilege.

In short, the tests are found useful in all sorts of unexpected ways. For example, Murchison (Miami University) showed that intelligence is one of the important factors in causing students to drop out of college when various other alleged reasons are given. His data are shown in Table IX.

TABLE IX

Intelligence as a Factor in Elimination

Reason for Leaving	Average Alpha Score	No. of Cases
"Sickness"	130	15
"Sickness at home"	116	5
"Lack of funds"	107	10
Transfer	107	11
Poor scholarship	105	14
Dissatisfied	100	7
By request	99	22
"Unable to get desired courses"	92	4

The influence of intelligence on elimination has also been shown at the Carnegie Institute of Technology and Chicago University:

	% in Each Quartile of the Test			
	4	3	2	1
Carnegie Tech., students eliminated in 3 mos.	57%	22%	13%	1%
Univ. of Chicago, students eliminated in 3 mos.	51%	28%	10%	11%

One of the present admission requirements of Stanford University is that the candidate must have reached the age of 16 years. This raises a question of fact as regards the relation between age and intellectual or scholastic ability in a given school grade. I have collected over a hundred correlation arrays between age in a given grade and scores in intelligence tests. Every one of these shows a negative correlation, running usually between —.20 and —.40. That is, the younger the pupil the more likely he is to exceed the average in intelligence.

The negative correlation of Terman Group Test scores with age, in the case of 587 senior students in some fifteen high schools is typical.

TABLE X

Showing Negative Correlation between Age and Score in Intelligence Test (High-School Seniors)

Age	Score in Intelligence Test																		
	20 or Under	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210
Over							2	4	1	1	1	1	3	2	2	1	2			
19			1		1	1	1	2	2	4	3	6	4	2	7	2	4		1	
18	1	1	1	1	1	3	9	5	13	7	22	17	17	21	9	13	9	5	1	
17					2	1	11	12	9	12	25	21	19	29	33	17	25	11	2	2
16							2	1	4	3	8	13	13	11	12	17	18	14	6	1
15												2	2	5	1	1	2	1		
14																	2		1	

Average scores at age for cases in Table X. is as follows:

Age	Average Score	No. of Cases
14	194.6	3
15	155.5	14
16	164.6	123
17	154.2	231
18	135.2	155
19	135.3	41
20 or above	135.0	20
		587

In a survey of 6,188 high-school seniors in Indiana, Book[5] found that the average percentile ranking was as follows for those graduating at various ages:

Age at Graduation	Av. Percentile Ranking
15 years	79
16 "	72
17 "	60
18 "	48
19 "	37
20 "	31
21–27 years	24

Jones[6] reports the following per cents. of A and B grades earned by freshmen students of different ages in Columbia:

Age	No. Cases	Per Cent. of A's	Per Cent. of B's
15	8	17	39
16	25	16	32
17	66	12	29
18	83	6	26
19	59	3	23
20	23	4	17
21	13	5	13

For 499 Stanford students the correlation between scholarship index and age of entrance was computed and found to be —.18. Of the 499, two, by special permission, had been allowed to enter before the age of 16. Both stood in the top 10 per cent. of the group in marks earned after entrance. Age comparisons have also been made between our "preferred list" and "numbered list" women. The former, selected on the basis of superior scholarship, are found to average about nine tenths of a year younger than women of the numbered list. For 1914 the average ages of the two groups were 17.9 years (preferred list) and 18.62 years (numbered list). For 1915 the figures were, respectively, 18.06 years and 18.89 years. The younger, preferred group also makes a very much better scholarship

[5] W. F. Book, "Preliminary Report on the State-Wide Survey of High-school Seniors," *Bulletin of the Extension Division*, University of Indiana, 1920, Vol. 6, No. 1. (The percentile values given above have been read from a graph on p. 54 of the report, and may not be perfectly exact.)

[6] Adam LeRoy Jones, "College Standing of Freshmen of Various Ages," SCHOOL AND SOCIETY, May 13, 1916, Vol. 3, pp. 717–720.

showing at Stanford than the older, numbered group. For 1914–1915 first-year matriculants the respective scholarship ratings for six semesters were 85.4 (preferred list) and 77.7 (numbered list). For the 1916–1917 women matriculants the difference in scholarship records was nearly 10 points in favor of the younger, preferred group. For 1919–1920 the difference was 7.4 points in the same direction.

This negative correlation between age and ability in a given grade is practically universal. Hundreds of examples could be collected from the literature of mental tests, and so far as I know a positive correlation has never been reported. In proportion as public schools come to grade their pupils more nearly according to mental ability, as they are now beginning to do with the help of mental tests, this negative correlation will become larger and the number of pupils graduating from high school before the age of 16 will materially increase. At present the number we are shutting out of Stanford by this rule is not large, but it is the cream of the available material. Such a rule would deprive us of the Lord Kelvins, the James Thompsons, the John Stuart Mills, the Sir William Hamiltons, the Thomas Youngs, and the Francis Galtons. Instead of barring out candidates below 16, I would seriously propose that we offer a $250 scholarship to any boy or girl who is ready to enter Stanford University before the age of 16 and has ranked in the top ten per cent. of his or her graduating class in the high school. We could afford to make it $500 for those able to meet this requirement before 15.

In closing I would like to urge the desirability of establishing a personnel bureau at Stanford, as a number of colleges and universities have already done. The personnel bureau has already proved its worth in many large industrial establishments, and it is likely to prove of still greater value in the study of the far more important material with which colleges and universities have to work. The functions of such a bureau would include the following:

1. Preparing and administering tests of general intelligence, and analyzing the results so that they could be used in the study of failures, in the comparison of student social groups and student ability in the various departments, in the vocational guidance of students, and in the selection of promising students for scholarships and assistantships or for encouragement toward advanced study.

2. To conduct research with tests of special aptitude, as in mathematics, science, literature, mechanical engineering, music, art, etc. In one of these lines (music) reasonably successful tests of native ability have already been devised. This entire field is without doubt one of the most promising in applied psychology.

3. To work out, with the assistance of professors in the various departments concerned, "achievement" tests for determining the progress students are making in mastering the subject matter of their courses. Tests of this kind are probably feasible in a majority of university subjects and they should in time largely replace the usual examinations, as they are already rapidly doing in elementary and high schools.

4. To make a systematic study of the methods of securing trait ratings of students by their instructors. The first problem here would be to ascertain by experiment what human traits are most amenable to accurate rating. The next task would be to find out what traits correlate

highest with success in different academic and vocational lines.

5. To cooperate with the appointment office by supplying certain kinds of data necessary for making intelligent recommendations for positions. Such data would include trait ratings, intelligence scores, and indications of special aptitudes. Recommendations which were known to be based upon a painstaking analysis of students' abilities would soon come to have far greater weight with prospective employers than recommendations based upon off-hand impressions and expressed in the usual unstandardized terms.

6. Other lines of investigation would include such problems as the relation of interests to ability, the relation of high-school success to success in life, etc.

In a university enrolling 2,500 students, and with the opportunity we have to select our material both before and after registration, such a bureau would justify any reasonable expense. Important work could be done with a budget of $5,000 a year. Even $10,000 a year would amount to less than $5.00 per capita, or three quarters of one per cent. of the per capita cost of instruction. It is my personal belief that the expenditure of 1 per cent. in investigations of the kind suggested would make the other 99 per cent. of our expenditures considerably more worth while.

LEWIS M. TERMAN
STANFORD UNIVERSITY

THE IMPROVEMENT OF COLLEGE TEACHING

FOR some years the writer has been interested in the improvement of the teaching of young college instructors but only recently has he been in a position to offer a course in college teaching. This opportunity having opened, courses have been offered, and certain experiences have resulted which will be of interest to administrators and faculties of colleges who are concerned about the matter.

The difficulties in the way of offering such a course are numerous. In the first place, some college instructors maintain that to become an expert college teacher one needs only an adequate knowledge of his subject, without special pedagogical training. Among such instructors, enthusiasm over a course in methods is lukewarm; and naturally this made me hesitate to offer such a course for fear of appearing presumptuous among my colleagues. Then, too, teachers of specialized subjects, such as mathematics or chemistry, question the ability of anybody like the professor of education, without thoroughly expert knowledge of the subjects, to teach specialists how to teach their subjects. Moreover, the professor of education, though having at hand a large body of methods of teaching in the elementary and the high-school fields, has no such mass of material dealing with the problems of college teaching and, therefore, is likely to feel that the teachers of mathematics and chemistry are partially correct in their contention; he knows that he has little information of the right sort at his command. Finally, there is the question of the method of attack; if one begins with psychology and philosophy and makes applications of a general sort, he must give a much longer course than can be offered to busy college teachers with any expectation of their continuous attendance. And without this fundamental information obtained in a leisurely manner they will have extreme difficulty in making the applications of the information to their concrete problems.

Fortunately for the initiation of a course in college teaching in this institu-

tion,[1] the writer has been gradually changing his point of approach to all methods of teaching. It has been the accepted practise of those writers on methods whose texts have received the most favorable attention from their colleagues in normal schools and colleges, to derive their general methods from psychology and philosophy and their special methods from general methods. In such cases the student is given the principles with a few applications for purposes of illustration but is expected to make the great remainder of the applications for himself. Because, however, of the extreme difficulty of applying principles in proportion to the ease of learning them, there is a wide gap existing between the point at which the text-book in methods ends and practise begins.

However, it has become increasingly evident to the writer that the point of attack should be changed. Descriptions of method should begin with practise and not with fundamental subjects. The first step should be to list the difficulties in teaching, the second to collect all possible solutions worked out by efficient teachers. These solutions should be experimentally evaluated to determine which are more efficient. They should then be classified according to common tendencies of method in order to obtain general methods and these should be interpreted in terms of such principles of psychology, sociology or philosophy as happen to apply to this body of method.

To carry the plan through these five stages is a long term task; but, in the mean time, all except the third can be carried on with ease. That is to say, difficulties can be listed and solutions collected. Without evaluation, these solutions may be used as suggestions, be classified and interpreted as far as possible, in terms of the principles of the fundamental subjects. Such a body of methods would at the same time become the basis of a most significant and spectacular program of experimental investigation into the comparative efficiency of the suggested solutions.

This point of attack, which has been presented in greater detail elsewhere,[2] provides an adequate method for the course in college teaching. If we can determine the difficulties of the young college instructor, collect the methods of handling these as worked out by excellent college teachers, and interpret them in terms of the principles of psychology and philosophy, we shall be able to answer all or nearly all the objections mentioned in the opening paragraphs. The professor of education will certainly avoid being charged with presumption by the professor of mathematics when he shows that the methods collected are those used by excellent mathematics teachers themselves. This demonstration would also lay the objection that only those who know the subject are able to tell how to teach it; for only the methods of specialists are collected. The professor of education will not be concerned over having in his possession methods only for the high school and the grades; he has by this plan a great mass of college methods. And he will be able to introduce psychology and philosophy in interpreting these methods. Even those who claim that only a knowledge of the subject is necessary for good teaching will have to face the fact that the collected methods are such as the head of a department gives to his beginners if he is at all interested in training.

Courses in college teaching were offered

[1] Carnegie Institute of Technology, Pittsburgh, Pennsylvania.

[2] *Journal of Administrative and Supervision*, September, 1920.

in this institution. No one was admitted except young instructors who are more likely to feel the need for such a course and would be overawed by older instructors of higher academic rank. Attendance has always been voluntary, and credit may be given when the young instructor is working for a degree. Each course is in the form of seminar which meets for two hours in the evening once a week for a quarter.

The plan of the first course, which is standardized in succeeding courses, consists, in brief, of the following steps. The group make simple job analyses of their duties as instructors and check those duties with which they have had difficulties. These are then listed. For instance, in the first course, fourteen points of a very simple and practical sort were listed and selected for study. These were:

1. Learning to know students.
2. Apportioning material to time (session, daily).
3. How do you prepare?
4. How handle discussion?
5. How get students to think?
6. How get interest?
7. How test class? Daily, session?
8. How grade papers?
9. How grade students?
10. How get students to work consistently?
11. How make assignments?
12. How get students to use what they know?
13. How get students to memorize and form habits?
14. What kinds of examinations are given?

The group were then trained to interview. They were asked to interview some one successful colleague and find out how he handled these difficulties. The descriptions were written on fourteen sheets of paper (for mechanical ease), brought to the seminar, and criticized by the group. Particularly was it emphasized that the question "*How* do you do this?" must be constantly asked whenever the one interviewed failed to give specific statements of method. In addition, it was found advisable to ask constantly for illustrations; when the one interviewed made a statement and was asked for an illustration of what he meant, the resulting story frequently was illuminating. Finally, the interviewer was required to write rapidly and fully, to conserve the exact and often vivid and picturesque expressions of the instructor questioned.

Before the end of the quarter the group had interviewed forty of the best college teachers in the community and had written up full descriptions. These were then sorted so that all the forty answers to each question could be considered together. The methods of handling each problem were classified according to common tendencies and written up without evaluation in organized form. At times partial quotations from the interviews were inserted and at other times full quotations were used. This material was mimeographed and courtesy copies were distributed to those who contributed their methods. The materials were used as the basis for study and interpretation in the seminar in which specific references to books and methods of teaching and educational psychology were read and discussed.

Certain definite results have been clearly observed. In the first place, and most important, the influence upon the members of the seminar has been pronounced. They make daily use of the suggestions obtained from the interviews; and in some cases they report that their teaching has been revolutionized. They appreciate most deeply the opportunity to talk in an intimate way to instructors whom they re-

spect and of whom in some cases they have stood in awe. They report, also, that they are forming the habit of talking to other instructors about their methods of teaching, to their own great advantage.

In the second place, the instructors interviewed have revealed a deep interest in their teaching. They talked freely and at great length, the record interview to date being four hours and a half, with the interviewer merely asking questions and the one interviewed going strong at the end of the conference. These excellent college teachers love their teaching so much that, to the writer, the almost complete absence of any discussion of methods of teaching in current conversation in college circles is both unfortunate and inexplicable.

In the third place, the instructors interviewed have many excellent methods which they have worked out from their own experience. This is to be expected in view of the fact that they are men and women of more than average intelligence who, when they are confronted by a difficulty, whether in teaching or in their fields of specialization, can be expected to produce effective and unusual solutions. The causes of the heavy criticism of college teaching, in so far as it is just, lie in the facts that some of the teachers are young and inexperienced, or old and ineffieient, and that others have not become aware of difficulties in teaching which have been noticed by high-school and grade teachers under the more acute conditions arising with younger and less docile students. But the difficulties of which they have been conscious they have met with excellent methods of solution.

Finally, it is quite apparent that any member of the department of education who is interested in methods of teaching and in the improvement of college teaching can conduct a seminar of this sort with the full cooperation of his colleagues in the academic and technical departments.

W. W. CHARTERS

CARNEGIE INSTITUTE OF TECHNOLOGY,
PITTSBURGH, PA.

EDUCATIONAL EVENTS

MEDICAL EDUCATION IN CHINA

AT a meeting in February of the medical men of Great Britain to advance the cause of medical education in China, Mr. Harold Balme, of the school of medicine of the Shantung University, gave the principal address, of which the following summary is given in the *Journal of the British Medical Association*. Western medicine was introduced into China by Colledge, a surgeon of the East India Company, in 1827, and a little later by Parker, a medical missionary from America. The first Chinese medical college was established at Tientsin in 1881, thanks to Kenneth Mackenzie, of the London Missionary Society, and the help of Li Hung Chang. Six years later a second medical school for Chinese students was founded in Hong Kong. After the Boxer rising, a school of medicine was established in Peking, the result of a combined effort of British and American medical men, and, following this, missionary medical colleges sprang up in other parts of the country —too many of them, indeed, in view of the limited staffs and equipments available. Meanwhile, a body of Chinese medical men, who had received their training in England and America formed a National Medical Association, with Dr. Wu Lien-teh, a graduate of Cambridge, as leader. Other organizations, not specifically missionary, in America, Germany and Japan, took a share in the work of medical education, especially the Rockefeller Foundation, which took over the complete financial responsibility of the Peking College, to which a large staff of expert teachers had been appointed, mostly from the United States, but including thirteen Chinese professors. The Council of Medical Education of the China Medical Missionary Association had

asked the Rockefeller Foundation to assist in the support of at least one medical school teaching in Chinese, and had also urged that all missions interested in the advance of medical education in east and central China should concentrate their forces upon the development of such a school. The school chosen was the one at Tsinan, now the school of medicine of the University of Shantung. The Rockefeller Foundation had asked the school to take over the three junior classes formerly under instruction at the medical college in Peking, and had made a very generous grant towards staffing, building and equipment. The school had secured a faculty of over twenty full-time teachers, representing some of the leading British and American universities. Similar efforts were being made in Moukden, Chengtu, Shanghai and other places. The Council of Medical Education had also outlined a two-year course of pre-medical instruction to be taken by students previous to entering upon their five-year medical course. The speaker touched also upon the great improvements in the Chinese nursing service, the interest of the modern Chinese in preventive medicine, and the sympathetic attitude of the Chinese government. The policy of the Board of Education of China, as stated by a representative of the board at the last conference of the China Medical Missionary Association, included the provision of a modern medical college in each province, the opening of an institute for research, and the registration of general practitioners.

THE AFFAIRS OF THE NEW YORK CITY BOARD OF EDUCATION

FRANK D. WILSEY resigned on April 13 his membership in the Board of Education in a letter to Mayor Hylan calling the board a failure, and expressing his intention of supporting the bill to establish a board of nineteen. Mr. Wilsey had been a member of the board for over twenty-five years. He said in this letter that from the beginning the tendency of the present board had been one of "drift and vague opportunism."

Wavering and failure have attended its efforts, and finally caused a loss of public confidence the like of which I have never seen during my long term of service. Important issues, instead of being squarely faced, have been shunted to one side whenever possible. Thus the board was at times indifferent or hostile to the crying demands of teachers for a decent living wage. The resort of the teachers to the legislature for salary legislation was necessary because the board of education deliberately ignored the teachers' desperate plight out of deference to the wishes of the board of estimate.

In accepting the resignation Mayor Hylan wrote: Is it not a fact that at the time of your appointment to the board of education you were a resident of the Borough of the Bronx, and that this residence has now been changed to the Borough of Manhattan? This change of residence would preclude your reappointment as a member of the board from that borough. With this knowledge of your ineligibility for reappointment and with scarcely three weeks of official life left for you, is it not rather late to belabor the board of education and find fault with the president of that board, whom you helped to place in office?

The Mayor then referred to the proposed bill, declaring that, if enacted, it would take the control of the public schools out of the hands of the people. He said in conclusion: "The Robinsin bill is a vicious measure and should be defeated. However, as you have expressed your purpose to work heart and soul for its enactment, your resignation is hereby accepted."

The bill sponsored by former Commissioner Ernest F. Eilert to abolish the present Board of Education and create a board of nineteen was introduced by Senator Robinson, of Herkimer. On the objection of Senator Walker the bill was not advanced to the order of third reading but was referred to the Committee on Education and was apparently not voted on before the adjournment of the legislature. Mr. Eilert rewrote his bill and the measure now provides for the creation of a commission consisting of the Mayor of New York City and the four regional regents

who would have the power to appoint the members of the Board of Education, eliminating the provision providing for the inclusion of Judges as members of the Commission, which was held to be unconstitutional. The regents are as follows: Chester S. Lord, former managing editor of The Sun; James Byrne, a lawyer; William Bondy, also a lawyer, and Herbert L. Bridgeman, publisher of The Brooklyn Standard Union.

THE BUILDING PROGRAM OF COLUMBIA UNIVERSITY

INITIAL steps to carry out at Columbia University the building program outlined by President Nicholas Murray Butler two years ago, have been taken by the trustees of the university. Preparation of plans for two new buildings, one to be devoted to the department of chemistry and the other for use as a faculty club, has been authorized.

The new chemistry building will be thoroughly modern in construction and equipment and will be built on Broadway immediately north of Havemeyer Hall. The Faculty Club, whose cost two years ago President Butler estimated at $300,000, will be located at Morningside Drive and 117th Street, adjoining the president's house. It is proposed to erect the chemistry building and the faculty club with funds recently received by the university in unrestricted legacies.

In a statement prepared for the University Council Dr. Butler states that some of the more urgent physical demands of the university should be satisfied. He says:

> Probably no one will dispute the statement that the central science just now, the one that is likely to remain the central science for some time to come, is that many-sided body of knowledge called chemistry.
>
> Schermerhorn Hall should be equipped for the sole use of the department of physics, the work now being carried on in Schermerhorn to be moved, with the exception of that in the biological sciences, into Fayerweather Hall. For botany, zoology and related subjects a building should be erected on the quadrangle site east of engineering building, especially planned and equipped for research work, as the upper floors of Avery are especially planned and equipped for work in drawing and design. We are in dire need of these additional accommodations for the experimental sciences.

THE STANFORD SCHOOL OF EDUCATION

THE Stanford School of Education for the work of the summer quarter, which begins June 21, will supplement its regular faculty by the addition of a number of men from other institutions. All the regular Stanford professors will also give courses except Dr. J. B. Sears, who is absent on sabbatical leave. With this augmented faculty, the school of education will offer courses especially designed along two particular lines, in addition to the regular courses. There will be courses in school administration for superintendents and principals and high-school teachers fitting themselves for such positions, and courses in applied psychology.

Professor Ellwood P Cubberley, head of the Stanford department of education, will be assisted in the school administration courses by Will C. Wood, state superintendent of public instruction; Edwin R. Snyder, state commissioner of vocational education, and William Webb Kemp, president of the San Jose State Normal School.

The applied psychology courses will be given by Dr. Lewis M. Terman; Dr. Raymond H. Wheeler, professor of psychology at the University of Oregon; Professor Truman L. Kelley, of Columbia and Stanford, and Ben Wood from Columbia University. Professor Wheeler will be at Stanford for the first half of the summer quarter ending July 27, and with Professors Terman and Kelley will give courses in educational psychology and in mental and educational measurements. In the second half, beginning July 28, Mr. Ben Wood will continue the courses given during the first half by Dr. Wheeler.

M. L. Darsie, assistant professor of education in the University of California, Southern Branch, will give a course in the hygiene of growth and development. This will be a part of the special program which is being arranged for teachers of physical education.

A feature in connection with the summer quarter of the school of education will be the regular Thursday evening lectures on current educational problems which are open to all students.

EDUCATIONAL NOTES AND NEWS

JOHN M. THOMAS, the new president of the Pennsylvania State College, was publicly welcomed by the students and faculty upon his arrival on April 16. A reception was held on the campus, in which the senior class president represented the students and Dr. E. E. Sparks, retiring president, expressed the goodwill and loyal support of the faculty and students for his successor.

DR. W. J. KERR, president of the Oregon Agricultural College, received an honorary degree of doctor of laws at the inauguration of Dr. H. Upham as president of the University of Idaho at Moscow. Dr. Kerr gave the principal address at the inauguration, his subject being "The college and the state."

HENRY PETERSON, superintendent of the Logan City Schools, has been appointed head of the department of education at the Utah Agricultural College, a position created by the recent session of the state legislature.

PROFESSOR B. H. BODE, of the department of philosophy in the University of Illinois, has accepted a similar position in the school of education of the University of Ohio.

JOHN J. MADDOX, principal of the Grover Cleveland High School, St. Louis, has been appointed by the board of education as acting superintendent of the St. Louis schools.

MARO S. BROOKS, deputy commissioner of education of New Hampshire, has been elected superintendent of schools of Medford, Mass., at a salary of $4,000. Mr. Brooks will succeed Fred H. Nickerson, who resigned to go to Quincy.

HARRY W. LANGWORTHY, supervising principal of Spring Valley, Rockland County, has been elected superintendent of schools of Oneida, N. Y.

CHANCELLOR KIRKLAND, of Vanderbilt University, and former Senator Hoke Smith will be among the speakers before the Georgia Educational Association, which will hold its annual meeting at Atlanta on May 5 and 6.

DR. HENRY CHURCHILL KING, president of Oberlin College, will give the commencement address at the Kansas State Agricultural College on June 2.

DR. LEO S. ROWE recently had the honorary degree of doctor of laws conferred on him by the University of Panama. The special commission, officially representing the president of Panama, which bestowed the degree, was headed by Ricardo J. Alfaro, minister of the interior for Panama. The ceremony took place in the Pan-American Building, in Washington.

AT the recent meeting of the Alabama Educational Association Dr. T. W. Palmer, president of the Alabama Girls' Technical Institute at Montevallo, was elected president.

AT Stanford University the following promotions have been made: Associate professors to be professors—William A. Manning, in applied mathematics; Leroy Abrams, in botany; Jesse B. Sears, in education; Thomas Addis, in medicine; Clifford G. Allen, and Aurelio M. Espinosa, in Romanic languages. Assistant professors to be associate professors—Edwin W. Schultz and William L. Holman, in bacteriology; William M. Proctor, in education; Everett W. Smith, in English (journalism); Charles N. Cross, in mechanical engineering; Frank W. Weymouth, in physiology; John E. Coover, in psychology. Instructors to be assistant professors—Elizabeth L. Buckingham and Edith R. Mirrielees, in English; Edward B. Towne, in surgery; James P. Baumberger, in physiology; Gordon F. Ferris, in entomology (zoology).

DR. ALBERT H. SHARPE, who has held the post of director of athletics at Yale University for the past two years, will leave the university at the close of the college year, when his contract expires. He is to become the head of the Ithaca School of Physical Education.

WM. PETERSON, professor of geology in the Utah Agricultural College and geologist for

the Utah Agricultural Experiment Station, has been appointed "director of interior instruction," a position recently created in the college.

PROFESSOR HARLAN P. BEACH, from the Department of Missions of the Yale Divinity School, has resigned and will be succeeded by Professor Kenneth S. Latourette of Denison University.

DR. HERBERT E. BOLTON, professor of American history in the University of California, has been appointed visiting professor of history during the spring session at Columbia University.

HENRY CLAY, professor of economics at Oxford University, during the last term will take charge of the work of the economics department of Amherst College.

PROFESSOR FRANZ CUMONT, the Belgian scholar, an authority on Oriental religions in the Roman Empire, will give a Haskell lecture at the University of Chicago on April 28, his subject being "The revival of the belief in immortality under the Roman emperors."

THE Ingersoll lecture on Immortality of Man will be given at Harvard University by the Rev. William Wallace Fenn, Bussey professor of theology and dean of the faculty of divinity. The lecture will be given on Wednesday evening, May 4, and will be open to the public.

DR. S. A. COURTIS, director of instruction, teacher training and research for the Detroit public schools, made an address on April 7, at the Cornell luncheon in Detroit, speaking on "Measurements in education."

DR. JOHN W. WITHERS, formerly superintendent of schools at St. Louis, the newly appointed dean of the School of Pedagogy of the New York University, met the members of the New York Schoolmasters' Club on the occasion of their dinner on the evening of April 9. According to the report in *School*, there were one hundred and eighty members present to extend the courtesies of the schoolmasters of New York and New Jersey. Those present included the principals of the three training schools for teachers in the city, the Chancellor Dr. Elmer Ellsworth Brown, the retiring dean, Dr. Thomas M. Balliet, and many others of the supervising force of the system. Dr. Francis H. J. Paul, president of the Schoolmasters' Club, introduced Dean Withers as one who had won four increases in salaries for the teachers in St. Louis in five years. Dr. Withers spoke on "New York City's leadership in education."

THE annual meeting of the Harvard Teachers' Association will occur this year on Saturday, April 30. The general subject of the meeting will be "The progressive movement in education," and the morning session, which will be held in Sanders Theater, will be addressed by Dr. Harold O. Rugg, of the Lincoln School of Teachers College; Eugene R. Smith, headmaster of The Park School, Baltimore, and Professor A. Duncan Yocum, of the University of Pennsylvania. Frank V. Thompson, superintendent of schools in Boston, will act as toastmaster at the annual dinner which will take place in the Harvard Union as usual. The speakers will be Frank A. Vanderlip, of New York; President Arthur E. Morgan, of Antioch College, and Dean Wallace B. Donham, of the graduate school of business administration at Harvard University.

MAXIMILIAN D. BERLITZ, originator of the Berlitz system of teaching languages, died on April 5, aged sixty-eight years.

DR. FRED A. GOWING, principal of the Girls' High School, Philadelphia, died on March 20, aged sixty-one years.

THE two measures known as the Lusk Americanization bills requiring teachers in the public schools to subscribe to an oath of loyalty and providing for the licensing by the State Department of Education of private schools, have been passed by the New York Legislature. Similar bills were vetoed last year by Governor Smith. The commission for military training in the schools has been abolished.

THE Oregon State Teachers' Association has adopted a single salary schedule for all

teachers, allowing minimum salaries of $1,200 to normal-school graduates, $1,400 to those with bachelor's degrees; $1,680 to those with master's degrees, and providing an annual increase of $120 for six, eight and nine years, respectively. No discrimination is made between grade and high-school teachers except as training and successful experience are emphasized.

THE committee on education of the Massachusetts legislature has reported, in the House, a teachers' salary bill, based on the recommendation of the commissioner on education. It increases the minimum salary for teachers from the present possible $650—which is $550, plus the $100 which may be contributed by the state if cities and towns comply with certain conditions—to a possible $750. This $750 is an actual minimum of $650 with that same extra $100, if cities and towns comply with the same requirements. This is practically the same as the $4,000,000 school fund bill passed two years ago. It was then estimated that it would require $4,000,000 to establish the $550 minimum, and that was regarded as a liberal estimate. About $100,000 of that $4,000,000 has not been expended. The proposed increase will require about $75,000 from the state, and can come out of the original estimate of $4,000,000.

THE 1921 legislature of the state of Washington made the following provisions for the university: (1) The millage was increased from .74 of a mill to 1.10 mills. (2) A tuition of fifty dollars a quarter was placed on all non-resident students, except those coming from the territory of Alaska. The tuition for resident students was increased from ten to fifteen dollars a quarter. Fees for the summer quarter and for extension are to be fixed by the board of regents. (3) The following appropriations were made for the biennium 1921–1923: (*a*) For operation and maintenance, including salaries and wages, supplies, materials and service, and capital outlays (instructional equipment), $2,506,044, from a fund made up from the receipts of the mill tax and a portion of the tuition fees, *i.e.*, $5 per resident student and $40 per non-resident student per quarter. (*b*) For buildings, from the general fund, to duplicate fees collected from the students during the biennium 1919–1921, $195,374. (*c*) For buildings, from a portion of the tuition fees ($10 per student per quarter) to be collected during the biennium 1921–1923, $499,757.

THE laboratory of the department of education at the University of Chicago has received from the commonwealth fund an appropriation of $1,500 to carry on studies in reading, using the method of photographing the eyes of children and adults during the process. Several members of the staff of the school of education will devote part of their time during the coming year to special researches along these lines. In addition several advanced students have been employed to carry on the work continuously under the supervision of members of the faculties. A further appropriation of $1,500 has been made for a series of French tests.

PLANS are being made for a summer school course, July 5 to August 12, in vocational rehabilitation, at the summer session of Harvard University. The course is to be given by the men in the Federal Board for Vocational Education who are most concerned with vocational rehabilitation, especially Mr. Fisher, Mr. Lamkin, and Mr. Munroe, assisted by specialists in various fields. It offers an opportunity to state agents about to undertake work in industrial rehabilitation and to persons desirous of working under the Federal Board or of widening their knowledge of rehabilitation, as well as workers already in the field. It is expected that field work will be provided. This course in vocational rehabilitation is offered in the graduate school of education and takes its place along with other courses in that school. While most of the summer-school students are college graduates, the work is open, particularly to summer-session students, to those who have not obtained a college degree.

A STUDENT government conference was held at the Massachusetts Institute of Technology

on April 8 and 9. Forty-three institutions sent delegates, as follows: Dartmouth, Princeton, Lehigh, Lafayette, Pennsylvania State, Washington and Jefferson, Washington and Lee, Colgate, Syracuse, Columbia, Cornell, Bowdoin, Brown, Stevens Institute of Technology, Georgia Institute of Technology, West Virginia, Northwestern, Purdue, Indiana, Massachusetts Institute of Technology, University of Pennsylvania, University of Pittsburgh, University of Tennessee, University of Virginia, University of Maine, University of Vermount, University of North Carolina, University of Kansas, University of Illinois, University of Michigan, University of Wisconsin, University of Minnesota, University of Chicago, Ohio State University, Iowa State College, Massachusetts Agricultural College and University of Missouri. The four groups into which undergraduate questions have been divided are the student governing body, the organization of athletics, undergraduate publications, and college theatricals and musical clubs.

OWING to the efforts of the French minister in Chile arrangements are being made for the exchange of professors between the universities of Paris and Santiago. Five professors from Paris will go to Santiago and five Chilean professors will go to Paris to lecture on the industries, arts and sciences of Chile.

THE second congress of normal graduates of Argentina has decided to do away with examinations in the present form and numerical classification and marks of grading, leaving to the judgment of the teacher the selection of pupils for promotion. Important changes in the qualifications and restrictions of teachers were made, and also changes and increases in plans for the character and number of normal schools.

TASMANIAN teachers have threatened to strike, pointing out that out of 800 teachers 505 receive less than £3 a week, 626 less than £4, 680 less than £5, and 720 less than £6. Out of 118 married men 18 receive less than £3 a week, 28 less than £4, 52 less than £5, 80 less than £6. The strike ballot was withdrawn on the government's promise to redress the grievances.

A $6,000,000 campaign for the removal of Goucher College from its present site and for the enlargement of its facilities will be organized by the board of trustees and started in June, near commencement time. The site of the new college will not be removed from Baltimore. It will cover at least 100 acres while the present quarters cover only thirteen acres on scattered city lots. The fact that Goucher enrolled 832 students last year and turned away 855 is evidence of the need of enlargement. An enrollment of 1,000 or 1,200 students is believed large enough for the new scheme of things. A chapel building, a building where all the various interests of students will be concentrated; a library and comfortable housing for members of the teaching staff are included in the plans.

SPECIAL CORRESPONDENCE

FOREIGN EDUCATIONAL NOTES

LIGHT is thrown on internationalism in Europe by the attendance of foreign students at the four technical *Hochschulen* of Prussia. The total number is 952, distributed as follows: Bulgaria, 182; Rumania, 112; Hungary, 88; the Baltic states, 169; Luxemburg, 73; Scandinavia, 48; Holland, 23; Switzerland, 12; Greece, 31; Jugo-Slavia, 35; Turkey and Egypt, 49; China, 9. The total from England, France, Japan, Italy and the United States is 31.

THE University of Strassburg was founded by Emperor Ferdinand II. in 1621. The three hundredth anniversary was held recently, not at Strassburg, but in the aula of the University of Berlin. There was a tremendous array of gowns, dignitaries, students in *vollem Wichs*, and much talk about Goethe as a student in Alsace. Commenting on the affair one German paper says: "And now the tricolor floats over Strassburg and the struggle now is about the question whether the university shall take on in time a French or an Alsatian character. It is to be hoped that the efforts being made by the Alsatians to secure unto themselves the university will succeed."

There can be no question of their success. The Alsatians will secure for themselves the University of Strassburg just as the *citoyens* of the *département* of Isère have secured the University of Grenoble, for example. Some adjustments will of course have to be made and it is to be hoped that France will make them intelligently and with not too much thought for the *intérieur*. But it is Strasbourg and Alsace now and not Strassburg and Elsass.

THERE was opened at Milan in February a *Universita proletaria Milanese*. Party interests are not to be served. "Anarchists are not to be excluded from wielding an influence" in this new university. Each student is to be given freedom to work out his own ideas. Once got going, this circus should be put on the road.

DR. MONTESSORI has accepted the position offered her by the directors of the Harpenden Montessori House. The position was created in order that Dr. Montessori might have unrestricted opportunity to put her theories into practise. She will give her lectures at the Mary Ward Settlement, Tavistock Place, London.

ACCORDING to a report issued by the Czechs, the Germans of Czecho-Slovakia have not only not been discriminated against, they have been favored. If German schools have been closed it was because there were no German children to attend them. The report says that where every group of 200 Czechish children has a school, a school is maintained for every German group of 170. The population is put at 66 per cent. Czechs and 33 per cent. Germans, a proportion that is said to be maintained in all the higher institutions of learning except the *Technische Hochschulen*, where the percentage is 50 to 50, and in the *Gewerbeschulen*, where it is only 39 per cent. Czech and 61 per cent. German. If this is true, the German press, regardless of political affiliation, has done the Masaryk government a grievous injustice and done it repeatedly.

WHILE discussing recently the university budget in the Chamber of Deputies, General de Castelnau commented on its size and, by way of making a point, remarked that in the army there was great need of discipline. To which M. Herriot replied that discipline was also necessary in the university. A long debate ensued which should be translated in its entirety and published in this country—in this country, where not one man out of ten thousand realizes that the pay of a captain in the United States Army (a captain is ranked as a junior officer) is nearly double that of the average professor's salary, while that of a major equals at least the average salary of our college presidents. Moreover, it is impossible to lose your position in the army (unless you commit murder or do something equally discourteous), you are sure of promotion, are handsomely pensioned and, unless you have cared to do it otherwise, your preparation not only costs you nothing, you are paid a salary to take it.

EDUCATION in Europe is becoming dramatic. In Belgium the honorary and unpaid school inspector claims that about eighty per cent. of the Belgian school children have dire need of dental treatment. In Sweden they are excited over the question as to whether sex hygiene should be taught in the schools. Hungary wants courses in anarchism beginning with the grade schools. Norway insists that she must have schools on housekeeping. And Switzerland is up in arms on the ruling against the married teacher, claiming that there are married teachers in all stages of freedom and bondage, and that to pass a law against the *verheiratete Lehrerin* without qualification is the last word in injustice. And indeed it would seem so.

THE Peruvian government has asked the German government for 200 teachers. About ready to pack up, delighted with the prospects, Minister Haenisch put a spoke in their wheel. He informed these teachers that life in Peru is most primitive, that they would be unfit to live in such a backward country unless they had been hardened by being at the front during the war. There is a good measure of truth in this.

BENEDETTO CROCE, Italian Minister of Education, laid a plan before his government for a sweeping school reform, including compulsory attendance, a new curriculum, and more careful method of selecting teachers and trustees. This included everybody. The plan was so completely defeated that the distinguished philosopher, aesthetician and critic may be forced to resign.

THE first Congress for Moral Instruction in Germany was held at Leipzig during the Easter recess. Professor Paul Barth of Leipzig said that Germany had the alternative: she could effectively introduce moral instruction in her elementary and grade schools, or prepare for a race of criminally minded citizens.

THE German student is no longer required to wear "evening dress" at his final examination for the doctorate. Whether he may now lay aside the "tile hat" on this occasion is not stated. But having rid himself of the uniform of the waiter he would do well to dispense also with that of the coachman.

THE private schools of Denmark, with special reference to Copenhagen, have hitherto received no financial aid from the state. Unable longer to carry on without such, the Danish Minister of Education has agreed to come to their rescue, but not with the 50 kroner per pupil per year which they asked.

M. DESTRÉE, Belgian Minister of Education, has been requested to arrange for courses in civics beginning in the grade schools. *La Nation Belge* says there is no question but that Belgian children need more instruction in national affairs now than before the war. It is plainly a case of *victoire oblige*.

WILHELM OSTWALD remarked some time ago that from the point of view of scientific production the German nobility had been "perfectly sterile" (*vollkommen unfruchtbar*). It was a statement which, of course, can not be substantiated. Count Carl von Klinckowstroem of Munich has replied to Professor Ostwald, giving a formidable list of members of the German nobility who have become deservedly famous through their contributions to science. Naturally he mentions such men as Counts Zeppelin, Arco and Kayserling, Baron von Richthofen, Prince Bismarck and Count Auersperg. When, however, he drags in a legion of men whose sole claim to nobility was the monosyllable "von," it is difficult to follow him. Karl von Savigny or Alexander von Humboldt hardly belonged to the nobility. The fact of the business is, the German nobility have been no more stupid than the average run of mankind. If they have not done great work in science it was partly because there were only three courses open to them: the army, the government and the management of large estates.

THE report on education in Poland looks good on paper. In former Russian Poland there were 5,600 primary schools with 7,600 teachers and 370,000 pupils to 2,000,000 children of obligatory age. In 1918–1919, there were 10,800 primary schools with 13,600 teachers and 850,000 pupils. In former Austrian Poland there were in 1918–1919 about 6,000 primary schools with about 18,000 teachers. In former Prussian Poland there were in 1918–1919 4,608 primary schools for 529,000 children. The course of study in the primary school lasts seven years. The most difficult task has been that of standardizing the system—next to securing teachers, and text-books in Polish. The most sweeping change has been made in the so-called "Middle Schools," which formerly specialized in Latin while Greek was optional. The present "Middle Schools" specialize in modern languages while neither Greek nor Latin is taught at all. In other respects, Poland has evidently followed countries whose national life has not been so checkered as hers and whose people are supposedly more advanced. She is omitting nothing. The evening school, the finishing school, the professional school and all the other types are represented. The Treaty of Versailles does not obligate Poland to support German schools and she is plainly taking advantage of the favor, with the result that the Germans are opening private schools of their own. All through, the report reads well; it is

reassuring—except for the repeated phrase at the close of the discussion bearing on any of the various grades: "Of course, it has been quite difficult thus far to secure competent teachers." Possibly Poland can solve her educational problems.

ALLEN W. PORTERFIELD
EDITORIAL OFFICE OF THE
NEW YORK *Evening Post*

HOUSE CLEANING IN THE ST. LOUIS SCHOOLS

(*From a correspondent*)

PROBABLY the most significant single achievement in education in the United States since the war is the cleansing of the St. Louis schools from the politics under which they have been submerged for the past few years. This statement is not meant to imply that St. Louis has a board of education, every member of which is ideal. In fact, some of the worst of the old members are on the board of education still, but the victory at the recent election was so sweeping, that with eternal vigilance the schools are saved.

In 1910 the plan of selecting city officials was changed under a state law, making it necessary to select them by primary instead of the old convention method. The experience of St. Louis with the convention system in the selection of the board of education was so fine, and the board of education of such high character that no one wished to use the primary method in so far as the board of education was concerned. The result was a change in primary as applied to all other officials while the school board continued to be chosen by the party conventions. Under the convention system the parties put superior persons on the board of education to help pull through the remainder of the political ticket. On the other hand, under the primary system the politicians paid off their obligations for work in the primary with positions on the school board. The result was that the character of the board rapidly declined and virtually became controlled by spoilsmen. Mr. Blewett felt this keenly, and no doubt the strain hastened his death. It was during his period that a member was dismissed from the board of education by the courts for grafting in the purchase of a school site, and the member was asked to return the funds to the city.

When Dr. Withers became superintendent he immediately faced this political situation. He saw that there could be no compromise with machine politicians, and therefore stood out firmly and persistently. He ignored demands of the politicians on the board of education for personal favors at the expense of the school system. The result was that he placed in opposition to him the spoilsmen on the board of whom at no time there was a majority, but a sufficient number to hamper his work enormously. At the end of his four years' period he told the board of education and citizens of St. Louis that he could be of no service under a board with such a large number of common politicians upon it. After his announced refusal to stand for reelection, he unhesitatingly and vigorously gave his time and energy to the work of placing the school situation before the public in an impersonal and disinterested way. The result of his resignation and the outspoken condemnation of the acts of the spoils element on the board of education was the thorough awakening of the citizens and the unexampled victory in the April election. The women of St. Louis played the major part in the house cleaning.

This story is told in an editorial in the St. Louis *Star* of Wednesday, April 6, one of the several papers that helped in the good fight. The editorial in part is as follows:

> The non-partisan board of education victory which carries with it an assurance that the school funds will be economically and judiciously administered, removes whatever objection there may have been to voting "yes" on the proposed tax increase to-morrow. The 85-cent rate should be carried overwhelmingly.
>
> Prior to Tuesday there might have been some reasonable hesitancy about entrusting further public moneys to a body weakened by political cabals. With the cleansing accomplished, however, there is no reason why an excellent non-partisan board should not be provided with all the revenues necessary to keep our school system up to the highest standard.

The women of St. Louis, working through their voters' league, deserve the thanks of the city for the excellent job of house cleaning they did on Tuesday. It is only to be regretted that in concentrating on school board affairs they did not find time and energy to devote to the mayoralty fight. Had they given the attention to the City Hall that they gave to the board of education building, the Kiel machine would now be in the junk-yard with the Hiemenz-Heier-Lammert slate.

The outstanding feature on the board of education ticket was the smashing defeat of Hiemenz. The result was not only a stinging rebuke to the moving spirit in the spoils conspiracy that drove Dr. Withers from St. Louis but is a slapping reminder to Dr. Henry Gettys, Richard Murphy and Stephen M. Wagner, who may yet be repudiated on the official count, that the days of political influence, and of the politically influenced, in school affairs are at an end. Their power in the board is now certain to be nil.

DISCUSSION AND CORRESPONDENCE

THE PRICE OF A ONE-LANGUAGE POLICY

As I have considered the demands of success in the various occupations and professions followed by the great mass of Americans, as I have thought of the different aims, ambitions and pleasures, legitimate for us, and the means of encompassing them, I have come to believe that no single factor is of greater value to each individual than the understanding and mastery of his own language. Language is the one essential and absolutely universal tool, the unique means which is necessary for every end, and the only connecting link between one soul and another which saves each from utter isolation. How may we best acquire this understanding and mastery? Shall we put all the time available for language study on one language in order to learn it more perfectly than we should do were part of this time given to foreign languages? Or is such a plan unwise and destined to defeat its own purpose?

It has been said that the ordinary man never knows that he has a stomach until it is out of order. I have found that there is much in our native language of which we never take cognizance until some mistake, made either by ourselves in learning a foreign language or by a foreigner in learning ours, calls attention to it. For example, I have taught Latin for many years, yet I have found few students, if any, who understood the dual nature of the English "participle" in -ing before stumbling over the translation of some sentence involving a Latin gerund. In fact I am inclined to believe that a knowledge of Latin to the point of being able to translate correctly, from English into Latin and vice versa, such sentences as (1) *I am singing,* (2) *I hear the bird singing,* (3) *They delight us by singing,* (4) *Singing is a pleasure,* (5) *To sing is a pleasure,* (6) *I wish to sing,* is absolutely essential to a real understanding of the participle and the infinitive of the English verb. How many students realize that English lacks a future participle before studying another language which has such a form? A correct appraisal of any language as an adequate vehicle of thought is out of the question to one who knows only that language.

Long ago when I began to study German I learned that in German there is a fixed order for adverbial modifiers expressing time, place, etc. For example we may not say, "Wir werden nach hause kommen Mittwoch," but "Wir werden Mittwoch nach hause kommen." I thought of this in my one-language ignorance as a way in which German differs from English, where to my mind the order was free, for I had never learned rules for order in my study of English grammar. Later a little Italian boot-black in telling me of his exemplary older brother said, "He comes at eight o'clock home every night," and of a valued patron, "He's the kind of man as every time gives fifteen cents." So I discovered that English too has a fixed order for which foreigners must learn rules or continue to betray themselves. I have used this second sentence also to illustrate the use of *as* as a relative pronoun, which though mentioned in English grammars is, I believe, rarely apprehended as a clear fact until one learns "Quot homines, tot sententiæ," and those other pairs which exhibit the relative stem, *tantus—quantus* and *talis—qualis.* Here also it is easy to show the

origin of the relative from the earlier interrogative: How many men are there? So many are the opinions. But the fact that the English order is not free but is cramped by the strictest necessity, becomes really apparent only when one advances in language study to a point where he can compare *Julia reginam amat, Reginam Julia amat, Julia amat reginam, Reginam amat Julia,* with *Julia loves the queen,* and *The queen loves Julia.* In Latin we learn that commonly the subject appears at the beginning of the sentence. If however the logical subject happens not to coincide with the grammatical subject, it is the logical subject which makes by its position a prior claim on the attention. How this same tendency shows itself in informal speech with us is illustrated by the following conversation which I noted on a train approaching Philadelphia, a few days ago. An ordinary American man about to leave the train, after putting his newspaper into his bag, said to his companion: "*This bag,* I can't hardly get it shut." His friend: "What's 'at?" (Meanwhile the bag has been shut and set down.) "I said, *that bag,* I can't hardly get it shut."

"Me and him plays together," says the little boy at school. "That is wrong," says the teacher. "Why is it wrong?" says the boy. And why is it? The purpose of language is to express thought. Does this sentence fail in the least degree of that purpose? Certainly not. Then why is it wrong—the boy is right to persist, but he never really can know until he makes the acquaintance of Julia and the queen in the language where he can contrast *Julia reginam amat* with *Juliam regina amat.* Here when he means the latter, he has not expressed his meaning if he misplaces the *m,* and he can see the error of his ways and a reason for changing. So this rule of an earlier language founded on good reason explains, and it alone can explain, the rule of a later language in which the reason has ceased to exist.

> What can they know of English
> Who only English know?

as Kipling might well have asked. Truly if Latin and Greek are dead, it is only by metapsychosis or resurrection of the body that we are to explain the bulk of any printed page in an English book. Of course there are and always have been those who ask and care for no explanation. But understanding and mastery are not of such as these. IRENE NYE

CONNECTICUT COLLEGE,
NEW LONDON, CONN.

QUOTATIONS

UNIVERSITY LEADERSHIP[1]

THE history of American college education divides itself into three periods: a period of isolation, when the colleges went their own ways, which lasted until about the time of the Civil War; a period of competition, when different colleges tried to get ahead of each other, which has lasted nearly down to the present day; and a period of coordination, in which they cooperate toward the solution of a common problem of national education, of whose dawn we already see the first signs.

Down to the time of the Civil War our colleges were more separate from one another in thought and feeling than the man of to-day can readily imagine. Separate churches, separate states, or separate localities founded schools to educate young men for their several purposes. The majority of students and professors in one institution knew very little of what was going on at any other. Each was so concerned with its own struggle for existence as to have little time to consider what others were doing. Something of this isolation continued until after the Civil War. In my own student days in the early seventies, I made a visit to Harvard because I wanted to see what Harvard was like; but the announcement of my purpose was regarded by my fellow students in much the same way that they would regard a proposed visit to Bolivia or Turkestan. And when I got to Harvard—fortified

[1] Speech of President Arthur T. Hadley at the New York City alumni dinner to President-elect James Rowland Angell of Yale University, at Hotel Astor, Friday evening, April 15, 1921.

with letters of introduction to the proper seniors—I was received with the same measure of cordial courtesy and half concealed surprise that we would receive a similar visit from the Grand Llama or a South American general.

Several things combined to put an end to this isolation. The Civil War itself and the growth of national consciousness that followed it; the development of public interest in athletics and the intercollegiate rivalry that went therewith; the establishment of endowed universities like Cornell or Johns Hopkins, avowedly national in their scope, which took their professors from many colleges and competed with one another to attract the post-graduate students—these and other causes combined to inaugurate an era of competition. We got both the good and the evil that always attends such an era; strenuous effort and improved performance on the one hand, duplication and misplaced attempts to attract students on the other. The whole mental attitude of that day was symbolized by a remark which a lady made to me in the early eighties, after she had seen a collection of glass flowers that somebody had given to Harvard: "What is Yale doing to get a similar collection?" When I answered that we had some objects for which to spend our money that seemed more important than glass flowers, she said, "But if Harvard has a collection of glass flowers, it certainly seems as though Yale ought to try to get a better one!"

Much of this competition still continues. But our colleges are beginning to recognize the folly of duplication and the need of division of labor. Institutions have been established with a view of coordinating our activity and making such division of labor possible. This movement for coordination has received a powerful impetus from the World War. This war not only brought our colleges together for two years in the pursuit of a common aim, but it made their advanced work so costly that they had to seek means of cooperation and division of labor in self-defense; to stop duplicating, because there is no money with which to duplicate. We have not yet progressed very far with the solution of these difficulties. Our fathers would probably say that we were under conviction of sin but had not yet found the way of salvation. The men who are to take the lead in the college work of to-day must be the ones who can best point out that way of salvation.

We are working on a great national problem—one where cooperation must be a habit and competition only an incident. Our leader in dealing with the present situation must be the man who knows the large elements which should guide our choice of activities rather than the local ones which indicate best how we can carry them out. The local knowledge he can get from others; the national situation he must understand for himself. And besides recognizing the character of the work that lies before the next president, the Yale Corporation has also recognized something else that is necessary for its successful solution—the intellectual kinship among all colleges and all college men who work together for a common purpose. This catholicity of spirit is the one sound basis for success in any cooperative enterprise, be it league of colleges or league of nations. The brotherhood of the legion—the spirit which animated the group of Roman soldiers until it became stronger than mere ties of physical kinship—was the thing by which the Roman army conquered the world. As a fellow-member of this brotherhood we receive Dr. Angell into our graduate body.

It is a common belief that a university is distinguished from a school by the fact that it teaches more kinds of things. But the real difference lies not in the variety of subjects taught; it lies in the breadth of vision with which they are taught and the breadth of recognition achieved by the teachers. The outlook of the school is local; the outlook of the university is world wide. The teaching of the school may be sectarian; the teaching of the university is catholic. The school may draw its adherents from certain classes or groups; the university appeals to the whole world. Under Dr. Angell's leadership Yale will enjoy this vision and this outlook, will teach in this spirit, and will sound this appeal.

EDUCATIONAL RESEARCH AND STATISTICS

THE MONROE SILENT READING TEST

AT the beginning of the school year 1920–1921 the teachers of the city schools of Madison were requested by the superintendent (C. S. Meek) to divide their classes into A and B sections, on the basis of the abilities of the individual pupils as soon as this could be determined. This was done within a month from the opening of school in most cases where conditions permitted, the A section being made up of the stronger pupils and the B section of the weaker pupils. The judgment of the teacher was the sole first determinant; this judgment being based on the general character of the initial work of the pupils. It is evident that a great variety of standards might obtain in a city school system and curiosity is keen as to whether the division as made is substantiated by the results of various applied tests.

The Monroe Silent Reading Tests were applied to the pupils of the Grades IV. to VIII. as a first step in increasing interest in Silent Reading. The comparison of results for the A and B sections throughout the school system was significant, the A section proving in general to be far superior to the B section of the same class. The following table gives the summary average of the median standings of the various classes in each grade for rate and comprehension, and shows the uniform superiority of the A sections in all measures.

Grade	Rate		Comprehension		
	Strong	Weak	Strong	Weak	
IV....	86.3	69.6	16	12.1	Test I. Form 1.
V.....	112.6	94.4	23.1	17.3	
VI....	109	88	26	16.7	
VII...	109.1	92.7	38.3	23.6	Test II. Form 2.
VIII..	128	106.	35.3	26.4	

The distribution of the measures for the Reading Test shows a marked overlapping of the A and B sections in the various classes, yet when we consider the percentage of the A groups which fall above the median of the corresponding B groups in the various grades and classes we are struck with the fact that the great majority of cases show a high percentage. These figures are given in the following table. "U" indicates that the grade was undivided.

School	Grades									
	IV		V		VI		VII		VIII	
	Rate	Com.	Rate	Com.	Rate	Com.	Rate	Com.	Rate	Com.
1	U	U	53	80	77	92	—	—	50	50
2	59	64	57	64	70	80	63	69	U	U
3	50	50	69	69	100	88	52	55	81	81
4	72	77	71	71	53	88	U	U	U	U
5	75	75	63	56	92	92	U	U	U	U
6	58	75	U	U	U	U	U	U	U	U
7	75	50	95	95	80	73	81	65	92	96
8	92	89	76	76	84	84	77	73	89	89
9	53	53	20	55	58	74	—	—	—	—
10	94	94	75	79	88	68	68	68	50	56
11	65	66	79	91	72	78	U	U	72	64
12	67	73	71	71	60	90	71	53	89	94

If the A and B sections of any class were of equal ability in the tests the medians would be the same and only 50 per cent. of the A group would fall above the median of the B group. Where the percentage is equal or less than 50 it is a sign that the classification as determined by the teacher is not substantiated by the giving of the Reading Test.

In some cases, as in the case of the Eighth Grade of School No. 1 the division was made on the basis of the pupils' ability to do original independent work, hence ability to pass a test of this type would not be an index, and it is not surprising that the sections prove to be of equal ability.

Some teachers were undoubtedly more largely influenced by a child's reading ability, while others fixed their classification in competition within other subjects as arithmetic and this may be one of the reasons for the wide differentiations in results and the failure of some groups to show a strong positive correlation. Nevertheless the fact that there is such a high correlation in the majority of cases is significant of the importance which ability in Silent Reading must hold in general classifications of pupils into superior and inferior groups.

PAUL V. WEST
UNIVERSITY OF WISCONSIN